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The banking crisis 1929-1933

Bachelor thesis

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Abstract

The issue of banking crises is of a significant importance due to their impact on the economic situation and having revealed the main causes of a bank distress, it should be possible to avoid some of them in the future by taking appropriate measures. The banking crisis during the Great Depression belongs to the biggest crises in the history and provides a great opportunity to properly examine the behaviour of U.S. banks. Therefore, the aim of my thesis is to identify the key moments of the banking crisis, analyse the adopted policies and regulations, reveal the main causes of bank suspensions and to examine the bank balance sheets to state which type of bank was the most resilient. The results implied that the crucial event was a fall of a large investment bank in 1930 that initiated the wave of banking panic when banks started fighting against both illiquidity and insolvency problems. The analysis showed that mutual saving banks were the most successful and that the trust of the public together with insufficient deposit insurance are key factors influencing the bank runs. However, the major drawback is considered to be the excessive risk banks were facing even before the stock market crash.

JEL classification: E52, M41, M48, N12

Keywords: bank balance sheet analysis, bank failure, banking panics, bank run, Great Depression, illiquidity, insolvency

Range of thesis: 82 475 (with spaces)

Abstrakt

Problematika bankovních krizí má zásadní význam vzhledem k jejich vlivu na ekonomickou situaci a po odhalení jejich hlavních příčin by mělo být možné se v budoucnu některým vyhnout díky implementaci vhodných opatření. Bankovní krize během Velké hospodářské krize patří mezi největší v historii a poskytuje skvělou příležitost řádně zanalyzovat chování amerických bank. Cílem mé práce je tedy identifikovat klíčové okamžiky bankovní krize, zhodnotit přijaté zásady a předpisy, odhalit hlavní příčiny bankovních suspenzí a pomocí analýzy bankovních rozvah uvést, jaký typ banky byl nejvíce odolný. Z výsledků vyplynulo, že klíčovou událostí byl pád velké investiční banky v roce 1930, která iniciovala vlnu bankovních panik, kdy banky začaly bojovat jak s nelikviditou, tak s platební neschopností. Analýza ukázala, že spořitelní družstva byla nejúspěšnější, a že důvěra veřejnosti spolu s nedostatečným pojištěním vkladů jsou klíčové faktory ovlivňující runy na banku. Za hlavní nedostatek je nicméně považováno nadměrné riziko, kterému banky čelily ještě před krachem akciového trhu.

JEL klasifikace: E52, M41, M48, N12

Klíčová slova: analýza bankovní rozvahy, bankovní kolaps, bankovní panika, run na banku, Velká hospodářská krize, nelikvidita, insolvence

Rozsah práce: 82 475 (včetně mezer)

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.

2. The author hereby declares that all the sources and literature used have been properly cited.

3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague, May 13, 2016 **Petra Strnadová**

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Signature

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Institute of Economic Studies
Bachelor thesis proposal

The scope of this work will be the bank collapse during the 1930s. I would like to determine, up to what extent was the banking panic a crucial catalyst and what were the main causes of bank failures. It will be focused also on the state intervention in the banking sector and the following commencement of Keynesianism. One of the goals is to determine the key moments of the banking crisis, especially the crucial event that initiated the wave of banking panics. Then, a comparison of years 1931 and 2008 should come and my goal is to state, which measures were the same, and on the contrary, whether there were implemented some new strategies.

Here is the preliminary outline:

1) The crisis-preceding situation
2) The outbreak of the crisis in the U.S. and the initial reaction
3) Crisis development and the role of the banking sector
4) Identification of key moments of the banking crisis
5) Different causes of bank failures and a balance sheet analysis
6) Role of the Federal Reserve and government
7) Comparison of 1931 and 2008 - what is repetitive and what is different

Methodology:

I will examine contemporary articles and academic papers as well as books written in hindsight and in a broader perspective and as a result I will provide a comparative analysis of the above-mentioned problems. Moreover, I will provide a balance sheet analysis of respective types of U.S. banks determining their financial shape and the survival rate. Also the development of several macroeconomic factors will be discussed.

Research questions:

- What were the main causes of the bank failures?
- How did the banking collapse influence the progress of Great Depression and vice versa?
- What was the role of Federal Reserve - to what extent was crucial the lack of regulation?
- Was it poor shape of the bank itself that led to the collapse?
- What was repetitive in the recent financial crisis – similar to 1929 or 1931 respectively?

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1. Introduction

The aim of my thesis is to examine the behaviour of U.S. banks during the Great Depression and determine the most important causes of their failure. Numerous banking collapses led to a banking crisis that ruptured during the Great Depression and contributed to the overall economic downturn. To properly understand this problematic it is important to look at a bigger picture considering all influencing circumstances. Banking crises themselves are an important topic for discussion due to their impact on the economic performance in general and also because of the relevance of political and central bank's interventions in the financial sector. Having stated the main causes of a bank distress, it should be possible to avoid some of them in the future by taking appropriate measures. Moreover, a crisis in the financial sector is usually followed by long-term consequences and can influence the economic fluctuations worldwide, as could be seen not only back in 1929 but also recently, during the financial crisis in 2008.

Reinhart and Rogoff (2008) point out at the illusion "this time is different" in connection with financial crises, describing their common features (such as origin in a financial centre and long-lasting impacts on output) and emphasising the fact that they have occurred frequently in the past 200 years. Cardarelli, Elekdag and Lall (2011) agree about the importance of financial cycles and assert that a turmoil in the banking sector usually results into a deeper and more serious economic contraction. Minsky (1986) was the first one who warned that a worldwide economic crisis would come again. Nevertheless, the Great Depression was a wide and complicated process difficult to describe and analyse and therefore this thesis will focus mainly on the banks' point of view as there seem to lay the crucial catalysts and some hidden factors. Defining the real causes of a banking panic and following banking failures is essential for appropriate regulatory steps and measures to improve the ongoing situation. Moreover, if there is a significant drawback revealed in the functioning either of the banking system or generally of the economic regulation, it is a subject for further actions and implementations of new regulatory policies to prevent such a disastrous downturn to happen again. Of course, there will always be the possibility of an unexpected event to occur, such as a change in expectations, a dramatic fall of a stock market or a destroyed bubble on a specific market. But as far as there will be stable and properly functioning banks and financial institutions

together with an appropriate level of regulation from the central bank and government, the risk of a worldwide depression or financial crisis due to a wave of bankruptcies in the financial sector will be significantly eliminated.

The financial and economic crisis from the year 2008 with its worldwide impacts suggests that the problematic of financial controls and economic regulations is still a current issue to be discussed as there are various opinions and attitudes of many relevant specialists. After a sudden fall of one U.S. financial institution (Lehman Brothers), there followed a worldwide economic downturn, the consequences of which might be still present. One of the goals of this thesis is to find a similar moment during the Great Depression, which resulted in a wave of financial distress, similarly as in 2008.

Economists, financial specialists, journalists and professors - they all have various opinions on the causes of Great Depression possible explanations of its depth and length and the ongoing financial distress. The U.S. banking crisis during the Great Depression has been already examined by several experts such as Friedman and Schwartz (1971), Temin (1976), Calomiris (1990), Bernanke (1983) and Richardson (2006) to name the most important. The perspective on the causes of the bank distress in the early 1930s in the U.S. can be divided into two main groups – authors who believe that the main causes lay outside the banking sector (the ongoing economic contraction), such as Temin (1976), White (1984) and Calomiris and Mason (2003). Then there are those who blame the poor financial shape of U.S. banks together with the current structure of the banking system – Friedman and Schwartz (1971), Calomiris (1990), Wicker (1980) and Richardson (2006).

Having followed this literature the thesis considers both types of factors as important and reflects them in the identification of key moments of the banking crisis, analysis of the implemented policies, stating main causes of bank suspensions, examination of bank balance sheets to state which type of banks was the most resilient and reconsideration of the deposit insurance issue. The main contribution includes the comparison of commercial and mutual savings banks showing why one type survived the crisis at much higher rate, revealing the financial risk that banks were facing even before the stock market crash and identifying the crucial event – fall of one large investment bank that initiated the banking panic. Moreover, the key mistakes (increasing taxes, keeping rigid wage, decreasing money stock, uninsured deposits) were recognised and possible improvements in the light of the recent crisis were suggested.

As far as the structure of this work is concerned, it focuses on the financial shape of bank institutions as well as on the prevailing economic situation resulting from Great Depression and partially also on the size of government regulation. First, there is a literature review provided where especially the theories regarding possible causes of bank distress and discussed. Then there comes a short description of the crisis preceding situation concerning not only the banking area but also macroeconomic and political factors influencing the overall conditions in the economy. After that, it focuses on the outbreak of the crisis and following banking panic and the following reaction of Federal Reserve and the government. Afterwards, development of the crisis in the banking sector is described, its peak in 1931 and another critical year 1933. This is followed by a practical examination of a sample of bank's balance sheets together with selected data for important macroeconomic variables. At the end, there is a debate over different policies that could have been implemented and also a parallel with the recent financial crisis in 2008 – what was repetitive and what was different. As a result, there is a conclusion from the analysis together with possible recommendations for future events, based on lessons from both financial crises described.

2. Literature review

Although the Great Depression and bank failures in the 1930s had been examined several times, still there is not one coherent opinion explaining all the events and the relationships there. And it is probably not even possible to defend one particular viewpoint because many factors are disputable or cannot be precisely measured (e.g., people's expectations or impacts of measures that were not taken). Despite this fact, it should be possible to mark some features that contributed to the wave of bank collapses and argue about impacts of the regulation which was imposed.

Friedman and Schwartz (1971) assert, that the decreased stock of money could have been avoided, had the monetary authorities taken the right measures in time. They distinguish several banking crises in the period 1930-1933, stressing out the widespread fear and following liquidity problems. Questionable though remains, to what extent the appropriate monetary intervention would have mitigated the ongoing crisis. Bernanke (1983) supports the claims of Friedman and Schwartz in his work by emphasising the insufficient accessibility of credit loans caused by higher cost because of distortions in the banking sector. Richardson (2006) discussed two major causes of bank failure – the illiquidity of banks (i.e., the inability to turn assets into cash quickly enough to satisfy the depositors' demand) and the insolvency (banks bankruptcies stemmed from the dramatic decline in their assets value). Wicker (1980) agrees that illiquidity was one of the crucial drawbacks in the bank's balance sheets.

On the contrary, Temin (1976) refuses monetary forces to be the inhibitors of the Great Depression and the consequent banking panic, although the stock prices decline could have been relatively important. His main argument is that long-term interest rate was not fluctuating enough and he describes the falling short-term interest rate as a possible indicator of higher bankruptcy risk. He disagrees with Friedman and Schwartz (1971) who believe that through performing open market operations by Federal Reserve and restriction of payments typical of the 19th century it was possible to relieve the banking crisis in the 1930s – he finds the argument of sufficient excess reserves very weak, given the poor structural relations stated. However, there are some weaker parts in his work, such as the lack of evidence for the change of expectations (related to change in interest rates and inflation). These can be only assumed, but it will be never precise enough to be used in an analysis.

According to Wicker (1980) the main aspects causing the bank failures in the 1930s were the loans and investments made during the 1920s. He describes this particular banking crisis as being special because it lagged the downturn in economic activity by more than a year and has only a negligible impact on the central money market. He supports his claim by a closer examination of the balance sheet of the Caldwell and Company, whose collapse seems to have a huge impact on the following panic spread across the banking sector. The main cause seems to be a sudden improvement in demand for currency relatively to demand deposits. The difficulties come, when this requirement remains unsatisfied and the particular bank experiences troubles when collecting cash to pay out the depositors. In fact, the core of this issue consists in consumers' and firm's rising expectations of future deposit losses. If so, many of them are likely to withdraw their money from the bank and rather have cash which is safer. But the question is – what draws the rise in negative future expectations about bank deposits? Usually, there comes a fall of a large financial institution or a high-status business company first. Typically in the U.S., the panic follows short time after an economic decline accompanied by interactions with the money market. Nevertheless, Wicker (1980) blamed managerial and financial practices (especially weak loans and investments) implemented in the 1920s in order to boost the growth and expansion. We will see later from *Table 3* that mismanagement and defalcation was an important cause of bank failures, especially in the year 1929. This is consistent with Friedman and Schwartz (1971) who saw the problems in banking area as rather independent of the overall economic downturn. Though, one cannot precisely say to what extent was the stock market an inhibitor of the changed moods in the society influencing negative future expectation about deposits and how many banks would have actually collapsed without this event just because of their bad financial shape and insufficient regulation. In contrast, Temin (1976) blames the agricultural situation and falling prices of lower grade bonds for the distress in the banking sector, he sees the agricultural downturn as the main catalyst influencing the poor performance of banking sector when the Depression broke out.

Some authors focus on the identification of particular factors influencing the conditions in the banking sector - for instance, Calomiris (1990) who focuses on deposit insurance and compared unit banking and branch banking systems, both functioning in the U.S. before and during the Great Depression. He points out a rather destabilising

impact of this kind of insurance. He asserts, that the depositors were rather uncertain about their portfolio's value (it was often backed by long-term assets, which was not easy to observe from outside the bank). This is strongly related to the issue of asymmetric information among depositors, when they are lacking complete information about bank's portfolio and with incomplete knowledge of the macroeconomic conditions it is easy to panic as some pessimistic news occur. In reality, poorly informed depositors can cause a widespread panic when misunderstanding for instance, that the coming shock will affect only a minuscule part of the customer base. People naturally begin to demand their money from banks and it is usually enough that one big financial institution fails and both banks and depositors are kept in a vicious circle. The panic spreads more and more and other banks are falling as they do not have sufficient level of reserves to pay out their depositors. Nevertheless, it is a common practice among banks, to have just a certain amount of cash and the rest of its assets in long-term bonds and other securities. In the case of a bank run there obviously comes a problem regarding the sufficient liquidity of the bank (i.e., its ability to gather enough cash to pay out its depositors). Unfortunately, between 1929 and 1933, many banks realised to be unable to meet their customer's requirements and the illiquidity was inevitably followed by insolvency afterwards (as showed later).

Moreover, he suggests possible improvements in terms of interbank cooperation, though their implementation is questionable. Together with Gorton (1991) they stated important factors with an impact on the origin of banking panic: level of interbank cooperation, branch bank laws and the presence of clearing houses. They admit that a banking panic can be a result of an unexpected shock which causes a wave of withdrawals, but on the other hand, similarly to Friedman and Schwartz (1971), they stressed out the importance of sufficient amount of bank reserves and they also agree with White (1984) when it comes to the interbank cooperation and branch banking. Additionally, they provide policy tools improving the banking system in the time of a crisis, at least in a theoretical way. The access to reserves could be assured through central bank and its open market operations. Smiley (2008) also raises the question about government economic involvement mentioning Keynesianism as a reasonable way to stabilise the economy when it suffers from a financial crisis, i.e. through government interventions.

As a combination of both factors is the banking crisis of the 1930s seen by White (1984), according to whom, the crucial ones are: regulation in terms of unit banking -

criticism similar to Calomiris (1990), local economic problems – such as lowered agriculture income and a decline in the value of banks' assets, as was suggested previously by Temin (1976).

A few econometric analyses have been conducted in order to prove relationships between bank's performance, its own informative ratios (based on balance sheets) and some macroeconomic variables. The most relevant research was done by Calomiris and Mason (1997, 2000 and 2003), Richardson and Troost (2009) and Jalil (2014). Calomiris and Mason (2000) used bank-level data of Federal Reserve member banks to determine a bank survival in a time of a banking panic. They concluded that a bank failure depends on the financial shape of individual banks but also on local economic shocks (the same as they stated in 1997 and further developed in 2003), and rather disagreed with Friedman and Schwartz (1971) theory of illiquidity and bank contagion. Jalil (2014) argues that monetary intervention (through large liquidity injection) did mitigate the banking panic, though it would have probably been more effective if the Federal Reserve had acted sooner. The only drawback is the size of the sample since banks from only one Federal District were tested. Similarly, Richardson and Troost (2009) see the discount lending to troubled banks as a monetary policy tool that improved the situation in the banking sector, based on their comparison of two Federal Districts.

The Great Depression and preceding period were described in works of Calomiris (1990), Kindleberger (1986) and Smiley (2008), each focused on different aspects. Kindleberger (1986) tries to explain the Great Depression in terms of its causes, consequences and hidden problems in the financial sector not only at the national level but also international (especially the lack of cooperation, since the International Monetary Fund and the World Bank did not exist yet). Smiley (2008) as described earlier, focused on the Gold standard problematics. Minsky (1986) focused on the banking failures and financial instability in general, he pointed out that the volatility of investments significantly influences balance sheets and growing risk is taken by managers, who were dangerously optimistic at the time of high employment, investment and profits. According to him, the main problems were the insufficient control by Federal Reserve and little attention paid to the variety of banks' portfolios.

Bernanke (1983) stresses out the difference between mutual savings banks and commercial banks during the financial crisis, where the first group was able to maintain

their operations without significant downturns whereas commercial banks faced severe troubles. An important fact to be stated is the historical issue of banking collapses in the US. Not only Bernanke argued that such events started to occur even decades before the Great Depression, but not in such scale, which implies that the stock market crash was simply a catalyst that induced a wave of banking panic that was inevitable in the time of insufficiently functioning banking system. The issue of numerous small independent banks operating on the market was discussed also by Calomiris (1990) who saw it as a primary cause of banking troubles. Bernanke (1983) supports his claim by pointing out at the examples of Great Britain, Canada and France, where only a few large banks operated on the market and these countries never had experienced such banking collapse.

Calomiris (1990) argues that the banking collapse in the 1930s can serve as an evidence that the government is able to seize down the banking system (here through deflation and monetary contraction). The key determinant is the supply of high powered money (total reserves) which was increasing between 1930 and 1933, but it is assumed that Federal Reserve was capable of controlling only the not borrowed amount of total reserves (Temin, 1976). Calomiris and Gorton assert in their work (1991) that almost every regulatory attempt was rather a government reaction to the banking panic such as founding the Federal Reserve System or establishing the Federal Deposit Insurance Corporation, for instance. Temin (1976) believes that had there been a policy to cure up the banking sector, it would have helped the economy as a whole. He refuses any significant impact of the long-term interest rate which was more or less constant during the 1920s and rather suggests that there was an important effect of a change in the short-term interest rate. Clearly, there had been an increase in the real short-term interest rates, which made it more difficult for firms to obtain financing. Moreover, the increased cost of capital to the firms can be viewed as a result of a higher risk of bankruptcy.

In the early 1930s financial assets gained in value in general since the price level and interest rates were falling. In addition, the stock market disposed of overvalued assets as described later. Temin (1976) pointed out that there can be observed a positive rate of asset acquisition in the early 1930s, since 1928 people were decreasing their money holdings while gaining other assets in turn. He suggests that the true reason was the change in expectations, as individual consumers were decreasing their leverage since 1930.

3. Crisis preceding situation

When analysing the bank failures in the early 1930s, it is important to look at the banking system structure and also macroeconomic and political conditions in the United States in the previous period of 1920s. The shape of the banking sector itself was clearly essential for studying the bank collapses, but it is of big importance to be aware of the circumstances also outside the banking world before this crisis burst out. First to be described is the political situation after the World War I together with the international position of USA, then the current development of macroeconomic variables and finally the features of the prevalent banking system.

3.1 Post-war political direction in the USA

The fact that the USA were one of the winners of the World War First in 1918 quite pre-determined their position and role in the following decade. The United States gained most of the worldwide influence - they became creditors for many states involved in the war, powerful exporter of final products and the U.S. dollar started to be used as international currency apart from the British pound. Generally, politicians aimed at reaching back the state of stability and unconcernedness as it was before the war begun. Successful could be called the governing of W. G. Harding and C. Coolidge, two republican presidents leading the U.S. in this period, who managed this and additionally, the U.S. became influential in many economies across Latin America (Kuklík & Kuklík, 1998). A phenomenon of this time is so-called "laissez-faire" policy, typical of which is the lack of rules, poor regulation and huge subsidies (Kuklík & Kuklík, 1998), and it was criticised especially by J. M. Keynes, who called for state intervention. Though it seemed as if certain insouciance spread even among politicians until everything was working properly.

3.2 Macroeconomic background during the 1920s

From the macroeconomic point of view, the 1920s could be called a "period of prosperity", since the U.S. economy was thriving. And several important factors helped

that – especially the care-free policy based on economic liberalism. The technological progress at the beginning of the 1920s (development in telecommunications, transportation, chemical industry, etc.) also contributed to improved conditions for economic activity. Undisputedly this period brought plenty of positives, such as economic growth, low unemployment, enormous production, high level of investment and large consumption (Kuklík & Kuklík, 1998). However, the prosperity brought about also some drawbacks, which were not so clear at the beginning. One problem was the overproduction which occurred because not everybody was rich enough to buy all the goods and services produced, but many companies kept producing, so that the supply many times overcame the demand. Another issue was the slightly growing unemployment, as many workers were replaced by machines. Both of these are obviously connected to a decrease in consumption in the second half of the 1920s (Vodička, 2009). Clearly, a few warning signs were present even before the "Big crash".

Nevertheless, people were still investing in stocks because the short-term interest rate was high, but it was not so costly to borrow money at that time. (Vodička, 2009). Being the world leaders the self-confidence of U.S. firms but also, of single consumers were boosted. Since there was the overproduction present on the U.S. market, there were consequently high profits generated by firms and a greater amount of dividends paid out in general. This pushed up the price of shares which creates an incentive for the public to invest in stocks. As already mentioned above, it was not so expensive to borrow money and logically, this new boom in stock investing rolled the stock prices even higher. Widely present optimism shaped the moods across society, almost everybody could afford to buy a few stocks, eventually through taking a small loan, which in turn further increased the stock prices and made investing in them even more attractive. Eichengeen and Temin (1997) states that it was the gold standard that contributed to these society moods through guaranteeing stable prices, moreover, it was a tool of central bankers to control the economic policies and monetary development. But to stick to this gold standard ideology even during an economic crisis might not be the best decision as will be shown later in *Chapter 4.3*.

3.3 US banking system in the 1920s

The consequences of the laissez-faire policy were present also in the banking area in the 1920s. Due to an insufficient system of bank controls, there were operating many small banks with just a poor regulation on the U.S. market. According to All-Bank Statistics, there existed several types of banks on the U.S. market. According to their type of functioning they can be divided into two main groups – commercial banks and mutual savings banks. The main features of a commercial bank include offering financial services to general public, such as accepting deposits, providing loans and possibly some investment products[1]. Typically, the central bank is responsible for commercial banks, supervises them, states the reserve requirements, etc. The second type is a mutual savings bank which was controlled by the central or regional government, but owned by its members who contribute to the common fund, so there is no capital stock. The fund is used to provide mortgages, loans etc. but in a conservative way to protect the deposits. The profits are then shared among the members.[2] This crucial difference will be demonstrated later in *Chapter 5.3* within the balance sheet analysis. The commercial banks in the United States were either private (not so common) or national (directly under the control of Federal Reserve) or state – operating on the state level and being either member banks of Federal Reserve System or not.

Bank failures occurred even before the stock market crash in 1929, but to a small extent and only in some areas, for example since 1925 in the Middle West due to falling prices of commodities and farm land (Kindleberger, 1986). This trend can be seen also from *Figure 2* in the next section. White (1984) argues in his work that reason for that was actually the unit banking system, typical of that period when there were operating small independent banks in many states of the U.S. After McFadden Act was enacted in 1927, the national banks were enabled to branch and therefore to compete with state banks, but interstate branching remained prohibited for national banks.[3] Calomiris (1990) saw a potential disadvantage in the deposit insurance system. The existence of deposit insurance, which was provided in some states by the local government was a nice example of adverse selection because banks whose deposits were covered by insurance has only a

[1] Investopedia
[2] Investopedia
[3] McFadden Act. Public Law 69-639, 69th Congress, H.R. 2, February 25, 1927.

little incentive to avoid taking excessive risks. Moreover, the market allowed various intermediaries to enter the banking system in order to finance their (usually risky) business. Not surprisingly, the insurance itself can have a destabilising impact as it was pointed out also by Kane (1988). However, the laws regarding branch banking and deposit insurance differed across the United States and therefore the banks were not in the same position. According to Calomiris (1990), the private coinsurance among banks (present in branch banks) enabled a better reaction to sudden crises on the financial market. Since the cooperation (e.g., interbank loans) was based on mutual help, there was no threat of free-riding on the benefits. So if unit banking with the government insurance and branch banking are compared, there is a clearly visible contrast – branch banks seemed to be more stable and adaptable to possible shocks as it was proved during the agricultural crisis in the 1920s.[4]

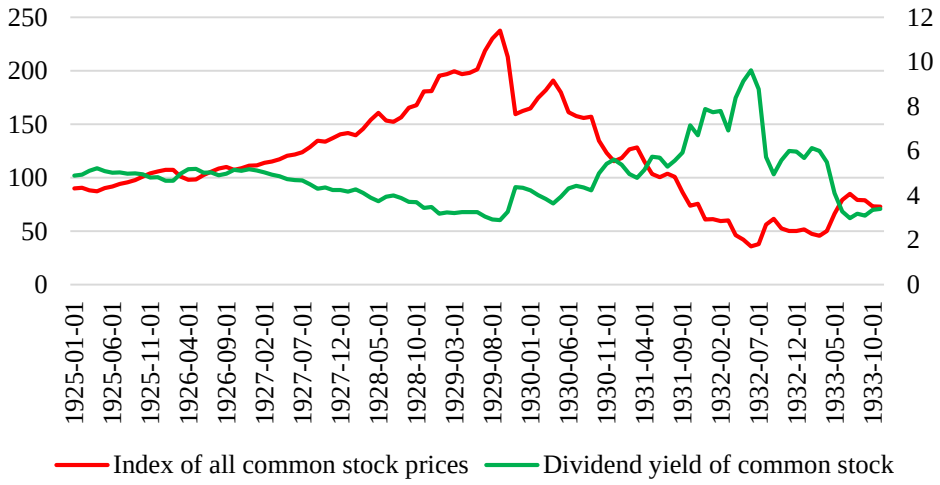
[4] Calomiris (1990), p. 291

4. The Great Depression 1929 - 1933

4.1 Stock market crash

In 1928, Federal Reserve raised its discount rate in order to increase interest rates in U.S. banks with the aim to kerb the flourishing stock market (Smiley, 2008). Despite this fact, the stock market kept growing (*Figure 1*). With the rising amount of overvalued stocks, the burst of the bubble was likely to happen soon - on the 24th of October 1929 the stock market had collapsed. But the stock market crash was not so dramatic as it is usually described – as Vodička (2009) states in his book, on the Black Thursday the stock prices fell only by 2%, they plummeted the next week (first by 13% on the Black Monday and by another 12% on the Black Thursday). What is quite surprising is the fact that in December 1929 the level of stock prices was the same as in the winter 1928 and they continue growing until April 1930 (see *Figure 1*). Although the market fell again afterwards, it is likely that the Great Depression was not caused by the stock market crash itself, but by the following second round effects with a devastating impact on the economic activity. Especially the exaggerated reaction of the people (bank runs, saving money instead of investing-resulting from the contagion of fear) and insufficient measures made by the government – this will be described later.

***Figure 1*: Common stocks - prices and dividend yields**



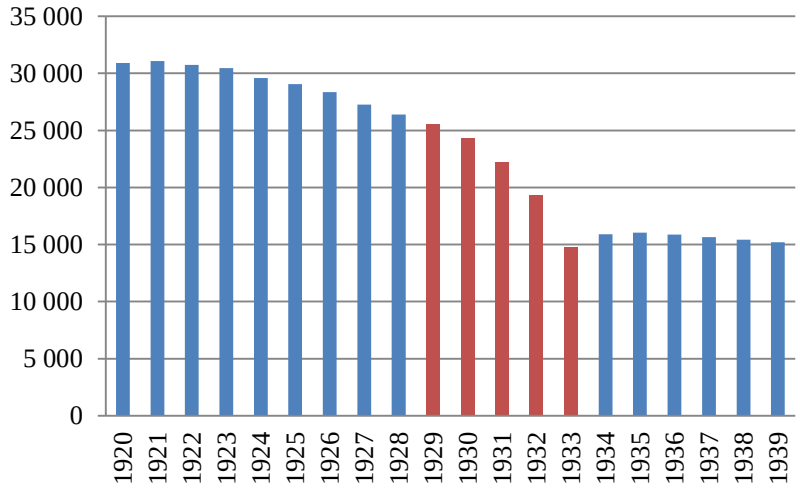
Source: Author, Data from National Bureau of Economic Research
Note: 1. Monthly data, not seasonally adjusted 2. Dividend yield in USD

A very important factor here is the lagged change in expectations. Concerning the stock market, *Figure 1* shows movements of *Index of all common stock prices*[5] and *Dividend yield of common stock* between 1925 and 1933. The strong negative correlation supports the idea of overpriced stocks, with declining value of dividends until the "Crash" while stock prices were on the rise and the dividend yields surged after the market disposed of low-quality securities.

4.2 Banking panic and the following response of government

The value of firms' securities plummeted and resulted in a significant downturn in the portfolio of many banks. Thus, it was a vicious circle – as the securities were losing their value and banks' assets were consequently declining, the panic spread across the society very easily and growing bank runs led inevitably to many bank failures. The number of banks that failed during period 1929 - 1933 is terrifying – 10797 out of 25568 (roughly 42%)[6] and even those who withstood the crisis suffered from huge losses. The stronger the position of the United States before 1929 and the greater the confidence of U.S. citizens in the national economy, the greater was the panic that spread among the society after the Big crash.

***Figure 2*: Number of U.S. banks**



Source: Author, Data from All-Bank Statistics, p. 33

[5] Index of All Common Stock Prices, Cowles Commission and Standard and Poor's Corporation for United States, Index 1935-1939=100
[6] All-Bank Statistics, p. 33

Since the easy access to loans thanks to the low interest rates was believed to be one of the factors causing the fall of the stock market, banks decided to increase interest rates in order to prevent other speculation with stocks (Vodička, 2009). It is difficult to state whether this was a right decision because cheap loans would have probably encouraged people to spend more money and boost the overall demand. It is generally believed (Friedman and Schwartz, 1971, Calomiris, 1990) that government should have increased the money supply, either by higher unemployment benefits or lowering taxes. So did president Hoover in November 1929, when he implemented 1% tax income decrease to show his trust in the economy (Smiley, 2008). Moreover, he ordered to firms to maintain wages and the same level of investment (Kindleberger, 1986). As Smiley (2008) further states, there was a production that was sharply declining in the first two years of the crisis, accompanied by almost steady wages due to the Smoot-Hawley Tariff Act. This act was implemented to support the domestic production against cheap import from abroad. However, as a result, each state started protecting his own domestic market. I addition, maintaining the same wage level even in the time of crisis instead of lowering wage and hire more workers to boost production, was enough to worsen the economic situation even without the imported good. Eichengreen and Temin (1997) also emphasise that the rigidity of wages (as a result of both implemented policies and growing unionism) contributed to further economic downturn.

It was the year 1931 when some companies finally decide to cut the wages radically, as there was obviously no other solution, but it was probably too late. In the same year, as budget deficit was still growing, Hoover decided to increase the taxes do decrease the budget deficit. On one hand, more money flew to the treasury, but on the contrary, the disposable income of U.S. households declined overall which implied lower economic activity in terms of less spending (Smiley, 2008). The government obviously thought that in a time of a downturn, the budget had to be balanced and that the state should have saved money. But the history has shown that this way does not lead to a better future. When people suffer from higher taxes, but with same wage and more expensive loans they logically do not spend but save their money. The case of firms was similar – with higher taxes and the obligation to keep same costs (wages) and the amount of investments, there was no space to grow and boost the economy.

4.3 Identification of the key moments of the banking crisis

This section focuses on the crucial downturns of the banking crisis connecting them with important political and economic decisions and events from a historical perspective. *Table 1* shows how many banks failed each month during the period 1929 – 1933. Figures greater than 105 are marked in red because during the period 105 banks failed each month on average (not taking into consideration the National Bank Holiday numbers). *Figure 3* demonstrates these changes on a timeline. Clearly, no big turbulences in the banking sector (regarding the bank suspensions) followed after the stock exchange crash in autumn 1929.

***Table 1*: Monthly bank suspensions 1929 – 1933**

Month/Year	1929	1930	1931	1932	1933
January	58	90	**198**	**342**	**236**
February	70	87	76	**119**	**150**
March	52	80	86	45	**3460**
April	40	90	64	74	30
May	66	59	91	82	12
June	79	67	**167**	**151**	11
July	67	64	93	**132**	12
August	18	67	**158**	85	22
September	37	67	**305**	67	13
October	41	71	**522**	102	17
November	70	**256**	**175**	93	8
December	61	**352**	**358**	**161**	29
Total	**659**	**1350**	**2293**	**1453**	**4000**

Source: Federal Reserve Bulletin (September 1937), p.907

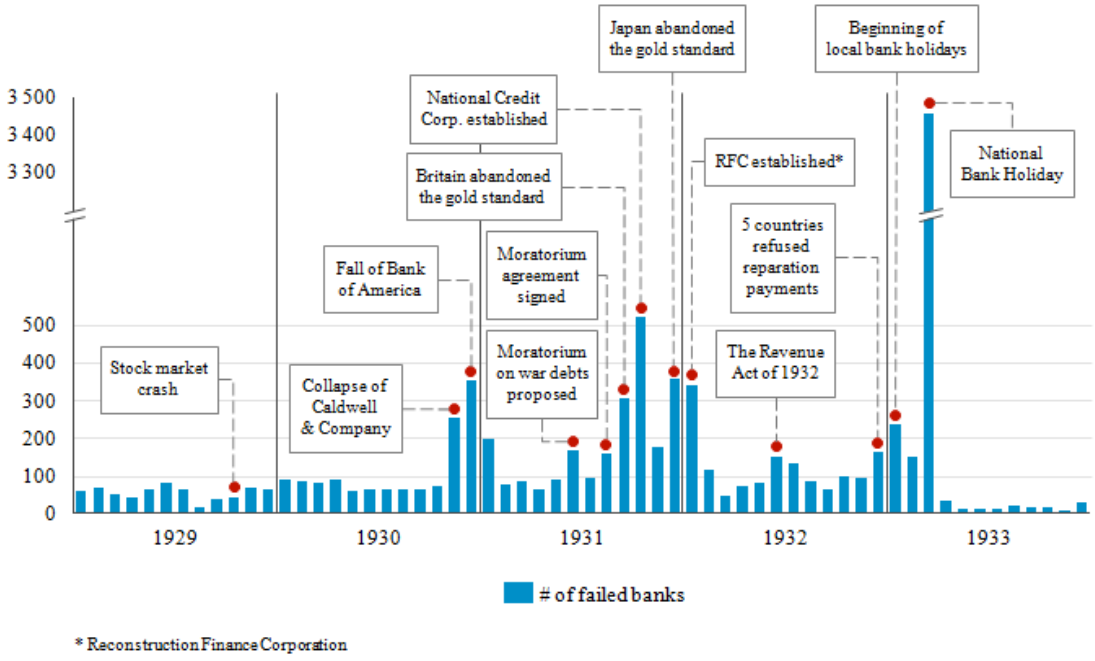
As Wicker (1980) stresses out the wave of banking failures occurred more than a year later. It can be also seen from the aggregate balance sheets of respective banks (see Appendix) that between 1929 and 1930 several balance sheet items such as deposits, cash assets and total assets even increased. And as Vodička (2009) suggests it was probably the reaction of U.S. people to the economic downturn that made them withdraw money in a large scale which was not so dangerous at the beginning, but since this phenomenon lasted, it inevitably led to several important collapses. The major breakdown came when the Caldwell and Company collapsed (in November 1930)[7] and posting this scandal in national press highly contributed to the overall panic. This event induced a huge wave of panic and following bank runs and the situation even worsened when the Bank of United States fell down in December that year (it was the second biggest institution that failed between 1921 and 1935, according to *Table A.4*). What is interesting is the fact, that there followed no further panic in New York, because The New York Clearing House banks declared that they were going to help with paying out depositors (up to 50% of customer deposits, in form of a loan to the closed banks) in order to handle the increased demand for currency (Wicker, 1980). This supports the idea of avoiding large panic among depositors when the relevant financial institution calms them down by providing a solution to satisfy the increased demand. The asymmetric information is then unlikely to occur and the trust in the banks at least partially remains. Nevertheless, even in January 1931, almost 200 banks were suspended. Friedman and Schwartz (1971) saw the liquidity crisis as a vicious circle – threatened depositors were demanding their money from banks, banks had to sell securities from their portfolios to gain cash, but this dragged the security prices lower as it was discussed earlier, which in turn caused many banks to fail because of insolvency and this only deepened the fear of society that the banking sector was not stable and their money in the banks was not safe there.

The situation among U.S. banks in fall 1930 predetermined the outbreak of the first banking crisis in 1931 when the ongoing banking panic culminated. The first signal was given in June when president Hoover proposed a one-year moratorium on war debts owed by the Allies under the condition that they would have relieved the war reparations that were about to be paid by Germany. As a result of postponing the payments, the U.S.

[7] Wicker (1980), p. 572

budget deficit was estimated to increase by 200 million USD[8]. With the aim to improve the ongoing situation abroad, president Hoover might have nevertheless settled a springboard for a further and deeper recession in his home country. This plan was signed in August[9] when another period of excessive bank failures begun. On the 20 September 1931, Great Britain abandoned the gold standard[10] and many believe that this was a crucial moment.

Figure 3: **Key moments of the banking crisis 1929 - 1933**



Source: Author

Eichengreen and Temin (1997) assert that the policies adopted to prevent gold outflow contributed to turning an economic recession into a depression. It is generally known that the world economy can rely on so-called self-correcting powers and thus within the economic cycle after a downturn there follows a boom afterwards. But as it could have been observed during the Great Depression, when insufficient or even wrong policies are adopted, the recession may even worsen instead of improving and may last very long time. Here concretely, Federal Reserve reaction was to boost the discount rate in order to stimulate the gold outflow (through restricting money supply). Not only

[8] Henning, A. S. (1931)
[9] Was war am 11. August 1931. *Chroniknet*
[10] "British suspend gold basis." (September 21, 1931). *Chicago Daily Tribune*, p. 1-2.

brought it lower asset value but also a fear of possible dollar devaluation was present among U.S. society, and thus financial assets were transferred abroad and depositors invested into precious metals (Richardson, 2006). Yet, there were still missing open market operations, which especially Temin (1976) stresses out. It was then easier to get money for the gold sold, then to borrow them and foreign investors, therefore, expected the dollar to devaluate so they sold dollars back to the U.S. to obtain gold which seemed to be more stable. As the interest rates were higher, more businesses and banks had failed, because it was more costly to sell U.S. assets for dollars to be redeemed in gold. Moreover, the confidence of depositors regarding the financial health of banks was on a continuous decline, because together with these Federal Reserve actions the bank suspensions continued.

During October 1931, bank continued falling and Hoover announced an establishment of a new privately financed national institution called National Credit Corporation with a budget of 500 million USD to help weak banks and small businesses.[11][12] During November, the situation slightly improved, but huge collapses were present for the next three months. In December 1931, Japan also suspended the gold standard (Kindleberger, 1986). In January 1932, the Reconstruction Finance Corporation was established to provide financial help to local and state governments, distressed banks etc. After that, the situation improved, because additionally, in spring1932 Federal Reserve allowed open market purchases which brought a huge relief to the U.S. economy, but it was probably too late. Richardson (2006) emphasises, that after this step a threat had spread among the U.S. society such that the U.S. would abandon the gold standard as well as Britain did a year before. Thus, depositors were buying precious metals and foreigners were demanding their funds. There followed inconsistent policies across different states, all resulting in growing number of bank suspensions. According to Friedman and Schwartz (1971), the Federal Reserve should have used intensive open market operations between January and October 1930 to have avoided the wave of banking panic that came afterwards. Concretely they suggested to lower the discount rate in a faster pace than it was done, but we can doubt whether this would have still been desirable.

[11] "Huge fund to bulk bad times." (1931, October 7). *Chicago Daily Tribune*, p. 1-2.
[12] Federal Reserve Archive – Bank Suspensions 1892-1935, p.7

Another increase in bank suspensions can be observed in June and July 1932, when The Revenue Act of 1932 was passed, whose purpose was to increase taxes and therefore decrease the budget deficit, which again did not help the troubled banks. In December 1932, another downturn came, following the announcement of 5 countries (France, Poland, Belgium, Estonia and Hungary) that decided not to pay back the war reparations amounted at that time up to 20 million USD.[13] Since January 1933, bank holidays started to be declared in many states in the U.S., In January it was Iowa, followed by Michigan and Louisiana in February and by March 3, 1933, the bank holidays were announced in almost a half of U.S. States.[14] The change came, when Roosevelt ordered a temporary shutdown of the banking system, known also as the "National Bank Holiday" as a consequence of insufficient measures which were implemented too late to have the fullest impact (such as the wage cuts in industrial companies, for instance, or the open market operations). Between 6 – 13th March 1933[15] all banks in the United States were ordered to close the business while performing no operations of any kind and after a week of this national temporary suspension, 3460 of them remained closed (*Table 1*). It is generally believed that this step helped many banks to reorganise and to collect some additional cash. Many economists (Bernanke, Richardson) agree that it was the revisited New Deal that helped the U.S. economy to sustainably recover and be stable again because mostly strong and perspective banks reopened. Although many banks did not reopen it was necessary to restore the confidence in the banking sector and the measures were the following: Glass-Steagall Act signed in June 1933 (commonly known as the Banking Act)[16] which separated the commercial and investment banking and together with this law the Federal Insurance Company was created. Its purpose was to insure the deposits against bank failure and therefore to improve the public trust. Nevertheless, the insurance was limited by a set of rules to avoid the risk of moral hazard (Krugman, 2012).

[13] "Six nations pay and 5 default; Debate course." (1932, December 16). *Chicago Daily Tribune*, p. 1.
[14] Friedman and Schwartz (1971), p. 325
[15] Jabaily, R. (2013)
[16] Maues, J. (2013)

5. Anatomy of the banking crisis

5.1 Different solutions of financial difficulties

The Great Depression is usually called the period between 1929 and 1939 before the World War II started, but this work focuses only on the years 1929 – 1933 because from the banks' point of view these years are the most relevant due to a significant number of banking collapses (as described earlier). From *Table 2* we can see how many banks faced financial difficulties each year and also that there were different types of so-called bank distress. Primarily, there was a bank suspension (i.e., closing the business for at least one working day, providing no services to depositors) which was either temporary or terminal (called liquidation). There also existed a voluntary liquidation, which was not officially ordered, but because of the threat of insolvency, the bank decided to close the business itself. Many banks were still solvent, but unable to operate effectively on the market because the majority of their assets was illiquid.

***Table 2*: National and state banks in financial difficulties (1929 –1933)**

Categories	**1929**	**1930**	**1931**	**1932**	**1933**	**Total**
Terminal suspensions	559	1137	1938	1137	3741	**8512**
Temporary suspensions	69	155	275	279	150	**928**
Consolidations (mergers and absorptions)	636	769	798	433	322	**2958**
Voluntary liquidations	57	68	99	101	89	**414**
Conversions to private banks	1	1	-	4	-	**6**
Unclassified	2	4	-	9	52	**67**
Total	**1324**	**2134**	**3110**	**1963**	**4354**	**12885**

Source: Federal Reserve Bulletin (November 1937): Changes in the number of national and state banks during 1921 - 1936
Note: 1. National and State banks amounted for more than 95% of all banks in each respective year. Data for private banks and mutual savings banks are not available and therefore were omitted from this analysis. 2. Terminal suspensions were calculated as the difference between all suspensions and number of re-openings of suspended banks in a particular year.

Consequently, in a certain break point, they had to close the business, but they were still able to pay out depositors. Conversion into a state or private bank was also a way to solve financial distress. The last possibility was a consolidation, when two or more banks merged and operated as one institution afterwards (or a more stable one absorbed the other)[17].

From Appendix (*Table A.1*) we can see that already in 1923 more than 1000 banks were in difficulties, but since a significant amount of them solved the distress through a consolidation, just a little attention was dedicated to it. Approximately 66% of U.S. national and state distressed banks went under terminal suspension between 1929 and 1933, which implies that they were in such a bad condition, that a temporary suspension or consolidation probably would not have been a solution. In 1929 a typical way to avoid a bankruptcy was to merge with another bank in a better shape, more than 48% of distressed banks had chosen this way. In the following years the terminal suspension became rather inevitable, in 1933, 86% of banks in financial difficulties were enacted to close their business. Voluntary liquidations were present rather occasionally and here the question arises – to what extent could have been the damages mitigated if the bank institutions had been aware of their critical situation sufficiently ahead to close voluntarily? Undisputedly, the depositors would have received a greater part of their money back and possibly the financial sector and consequently the economy overall would not have faced such deep turbulences as it had to. In the Appendix, there are also separate tables for national and state banks attached (*Table A.8* and *Table A.9*) and they are further commented in *Chapter 5.3*.

5.2 A detailed view of distressed banks 1929 - 1933

5.2.1 Reported reasons of bank suspensions

Table 3 describes different causes of bank failures in the period of 1929 - 1933. These figures are taken from Richardson (2006) and can be originally found in the National Archives of Administration. The data were collected during the Great

[17] Federal Reserve Bulletin, November 1937, p. 1084-1086

Depression when the responsible officers had to fill in appropriate documents regarding the cause of a bank closing.

***Table 3*: Causes of U.S. bank suspensions** (January 1929 – March 1933)

Categories	**1929**	**1930**	**1931**	**1932**	**1933**	**Total**
Assets and liabilities	242	848	1720	1125	337	**4272**
Assets	102	316	457	354	91	**1320**
Assets (p) and withdrawals (c)	44	142	294	250	61	**791**
Assets (p) and withdrawals (p)	16	71	163	74	22	**346**
Withdrawals (p) and assets (c)	38	145	487	294	116	**1080**
Withdrawals	42	174	319	153	47	**735**
Closure of correspondent	28	140	97	68	24	**357**
Defalcation and mismanagement	143	153	159	76	16	**547**
Other and multiple causes	90	215	298	193	91	**887**
Total	**503**	**1356**	**2274**	**1462**	**468**	**6063**

Source: Richardson (2006, p.603), originally from National Archives and Records Administration
Note: 1. (p) stays for a primary cause of a suspension, (c) stays for a contributing cause. 2. These figures represent all U.S. banks, including mutual savings and private banks, and in year 1933 data for only the first three months were available, thus the total number of suspensions are different when compared to Table 1. 3. Both types of suspensions (terminal and temporary) are taken into consideration here, but with exception of a closing due to a governmental proclamations or moratoriums, which explains that these total numbers are slightly different from the official statistics of total bank suspensions in a particular year.

We can see that the main cause of distress were assets losing their value and heavy withdrawals. Approximately one-half fell down because of excessive withdrawals (became insolvent) and one-half collapsed as a result of frozen or devaluated assets (became illiquid), but typically the cause of a bank failure was a combination of these two. We can see, that in each observed year most of the banks (70% and more) were suspended because of troubles with their balance sheet – therefore it seems relevant to focus on the balance sheet analysis. Also collapsing correspondents and mismanagement are worth paying attention. There is surely space for further examination – especially the

issue of defalcation and mismanagement, this type of cause was responsible for 143 out of 503 bank suspensions in 1929. This fact again supports criticism of unit banking and similarly as today, one can only ask whether the regulation and control of banking institutions really is sufficient. The management frauds and misbehaviour will be more discussed in *Chapter 6*.

According to Richardson (2006), the excessive money withdrawals are considered to be behind more than a half of all temporary suspensions. This indicates that in a case of illiquidity problems, the banks were closed up until the moment when they collected enough cash (if so) and could re-open the business to continue operations. This was not that easy since many banks were suffering from bank runs and wanted to sell their market securities quickly to turn them into cash, but since the supply of assets increased quickly and only rarely someone felt confident enough to invest again, just a part of temporarily suspended bank was successful in re-opening. In addition, Richardson (2006) states, that less than a third of temporarily suspended banks had low-quality assets, whereas in a case of terminal suspensions this was the main cause of their failure. This is in fact very logical because the price of assets decreased dramatically since they were oversupplied and the banks desperately wanted to sell them for really low prices only to get some cash and not have had to admit that their securities were just worthless papers. The most important conclusion from this part is the fact, that bank failures during the Great Depression had two important causes – assets losing in value and excessive withdrawals made by depositors.

5.2.2 Small local banks falling at a higher rate

Between 1921 and 1929 bank failures were typical of the agriculture area, but during the Great Depression, it spread across all regions including industrial and financial centres.[18] The existence of suspensions mostly in agricultural regions supports the Temin (1976) hypothesis, that also exogenous factors had their impact – such as dependency of the local economy on the agricultural output but also their size and independence on the system (no financial aid from parent bank) contributed to this fact and it is difficult to

[18] Federal Reserve Archive – Bank Suspensions 1892-1935, p.3

determine, without further examination, to what extent were the respective factors crucial. According to *Table A.2* (see Appendix), suspensions occurred rather in small cities during the crisis, which could have been explained by less informed population and also by the Temin (1976) hypothesis that in rural areas the impacts were more harmful. But in 1933, even the biggest cities were hit by banking distress, when 217 banks collapsed in cities with more than 100 000 inhabitants.

According to *Table A.3* (see Appendix), throughout the crisis mostly small banks[19] were falling which supports the criticism of unit banking system – bank without the support of a parent bank, other branch or the Federal Reserve (not only brand and reputation but financial help in the first place) suffered the most. Nevertheless, also the large banks were hit by the depression, 30 banks with loans and investments amounted between 20 000 000 USD and 380 000 000 USD fell down between 1930 and 1933, with total 1 850 000 000 USD. During 1932, the Reconstruction Finance Corporation made loans to distressed banks in the amount of 810 000 000 dollars to avoid additional suspensions.[20] This significant financial injection could explain the mitigation of banking crisis in this year when the overall number of suspensions was smaller than in the previous and following year (*Table 1*). What is fascinating is the phenomenon of "too-big-too-fail" institutions which might have been present in the U.S. banking sector – in *Table A.4* (see Appendix), there are listed the exact dates of failures of the 30 largest U.S. banks that collapsed in the period of 1921 – 1935. All of them collapsed between 1930 and 1933 when it became unavoidable even for the biggest institutions if they were in financial troubles. The issue is whether it was the crisis itself or the inability of the government to continue financing these giants. However, the most suspicious fact is that 14 of them collapsed after the National Bank Holidays, it means at the time when all re-opened banks were given a permission to continue operations and were supposed to be financially healthy enough to persist the depressed economic situation.

[19] Small bank is defined here as a bank with the volume of total loans and investments smaller than 500 000 USD.

[20] Federal Reserve Archive – Bank Suspensions 1892-1935, p. 7

5.3 Practical examination of banks´ balance sheets

In this section, there are three main topics discussed – firstly, financial shape of all U.S. banks in the period 1929 – 1933 (relevance of this period was explained in the previous chapter), then commercial and mutual and savings banks are compared and lastly the difference national and state banks is described. The analysis is based on a balance sheet examination, where four relevant ratios are calculated. The first one is a loan-to-deposit ratio[21], which measures the liquidity of banks or in other words, it describes how much of its deposits has the bank lent out and therefore how well is the bank prepared for a possible run. The second ratio is a total debts-to-total assets ratio[22] which assess the leverage of a particular bank, i.e., what it owes to other parties compared to the value of its assets. The "debts" item includes deposits, borrowings, national bank notes and other liabilities.

Figure 4: **Bank balance sheet items**

ASSETS	LIABILITIES
LOANS • Real estate • Collateral • All other	**DEPOSITS** • Interbank • U.S. Government • Other demand (payable within 30 days) • Other time (payable after 30 days)
INVESTMENTS • U.S. Government obligations • Obligations of states • Other securities	**BORROWINGS**
CASH ASSETS • Currency and coins • Cash items in process of collection • Bankers' balances (including reserves)	**NATIONAL BANK NOTES**
OTHER ASSETS	**OTHER LIABILITIES**
	CAPITAL
	SURPLUS & OTHER CAPITAL ACCOUNTS

Source: Author, All-Bank Statistics, p.7

The third ratio is a cash-deposit ratio[23], which measures exactly what percentage of its deposits is the bank able to pay out immediately. Here the cash item is the sum of currency

[21] Investopedia
[22] Investopedia
[23] Investopedia

and coins, cash items in process of collection and banker's balances. The last ratio is the debt-to-equity ratio[24], which indicates to what extent does the bank finance its operations on its own and how much of the financing is obtained from outside. The data come from All-Bank Statistics which is an official online database administrated by Federal Reserve. For each type of a bank, there is an aggregate sum of all balance sheet items (a detailed description can be seen in *Figure 4*) for a particular year. The current ratio (working capital) ratio was omitted from this analysis because there is no further specification available about exact sums of current assets and liabilities (i.e., specified maturities of securities or borrowings).

Table 4 shows ratios for all banks in the United States between years 1929 and 1933. More specified details regarding balance sheet items and calculation are to be found in Appendix.

***Table 4*: All banks** (1929 – 1933)

Ratio	**1929**	**1930**	**1931**	**1932**	**1933**
Loan-to-deposit ratio	72%	68%	62%	62%	54%
Total-debt-to-total-assets ratio	87%	86%	86%	85%	86%
Cash-deposit ratio	16%	19%	18%	16%	19%
Debt-equity ratio	642%	616%	610%	572%	595%

Source: Calculation based on data from All-Bank Statistics, for detail see Appendix, *Table A.5*

Overall, we can see that there occurred certain significant changes throughout the period. First of all, the loan-to-deposit ratio indicates that in 1929 almost three-quarters of the bank deposits of U.S. citizens flew out of the banks in the form of loans. This is also connected to the issue of cheap credit and low interest rate discussed in *Chapter 3*. Generally, a high value of this ratio suggests possible difficulties when the bank needs funds immediately because loans are typically granted for several years and it is impossible for a bank to demand all loans to be repaid at a moment. According to Forbes[25], the optimal structure is 80 – 90% of deposits to be lent out, since it is one of the

[24] Investopedia
[25] "A Look At Loan-To-Deposit Ratios At The Country's Largest Banks." (2014). *Forbes*

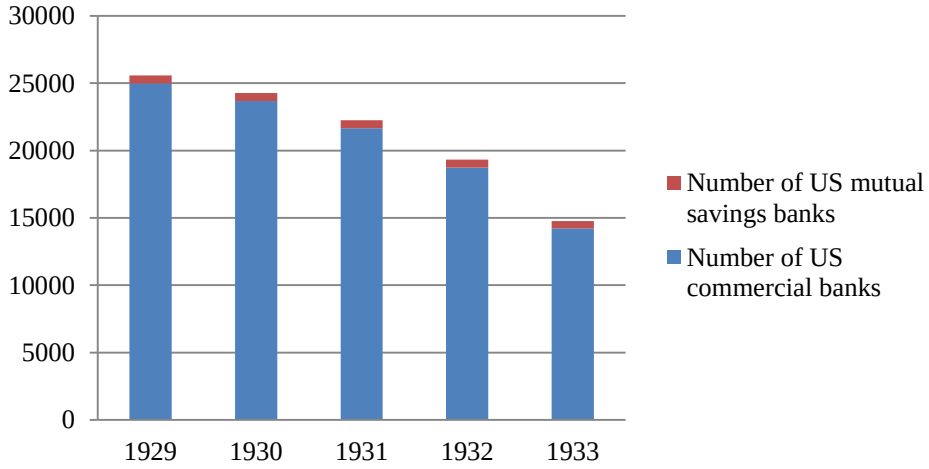
most common ways for the bank to earn a profit (here it means that per each dollar of deposit the bank will provide an 80 cent loan and get the respective interest for it). In the following years, the ratio was gradually on a decline with a stagnating period between 1931 and 1932 and a drop by 8% in the year 1933. Obviously, banks were controlling and cutting the amount of money they lend out, especially through the decline in the interest rate (which is further described in the next section). But without sudden dramatic restrictions (the end value of the loan-to-deposit ratio was 54%, which is definitely low) the banks were probably not earning the fullest profit, but in case of an economic depression it seems only logical to keep funds inside. However, the question is whether cheaper loans would have helped to boost the economy in terms of higher investment and consequently higher earnings for banks through a greater amount of interest gained. As far as the total debts-to-total-assets ratio is concerned, it was almost invariable with the average value of 86% which implies a high financial risk in terms of huge banks' leverage in each observed year. The fact that banks kept the proportion of debts compared to their assets does not necessarily mean that it was their intention, but simply it was difficult to obtain outside financing during the financial crisis (to increase the equity portion), especially when there were many small independent banks operating on the market. Additionally, interbank cooperation on the national level was prohibited (see McFadden Act in *Chapter 3.3*). On the contrary, the debt-equity ratio was enormous, in 1929 the debt was more than six times higher than equity, and in the 5-year period, it decreased only by small percentage compared to the initial value. Generally, the lower this ratio, the higher the probability of meeting the banks debt obligations. Obviously, here lay the crucial drawback, banks were operating with multiples of their equity without sufficient reserves and it was only a matter of time when it would become a serious problem.

Bank failures were present in the United States even before the stock market crash and this ratio shows that with a catalyst such as significant stock exchange downturn, could cause several years of financial distress and economic depression across the whole state. A low value of this ratio also means that the bank is able to rely on its own financial sources and is not so dependent on its creditors. After the economic downturn in 1931, it is observable that banks tried to obtain financing from investors/creditors - the debt-to-equity ratio had tripled between 1931 and 1932. Having a closer look at the cash-deposit ratio, it was steady between 16% and 19%, which is a sufficient proportion even today.

The problem is that during a banking panic, these amounts are insufficient because the banks were able to pay out only 18% of its total deposits to the people and as described earlier, it was really difficult to get cash for the rest of its assets. Interesting is the proportion of deposits compared to assets, which was around 80% during the period (see Appendix, *Table A.5*), but only 18% of deposits were the banks able to pay out immediately. This fact supports the criticism of low assets liquidity which initiated the fall of many banks.

As it was stated earlier in *Chapter 3.3*, the U.S. banks can be divided into several groups according to their function, operating structure and the financing issues. Very interesting is the comparison of commercial banks and mutual savings banks, which differ completely by all the criteria and that would presumably explain their different rates of survival during the Great Depression. The *Figure 5* below presents the respective numbers of each bank in every year. Between 1929 and 1933 commercial banks represented ca. 97% of all U.S. banks and their failure rate was 43% in total. In contrast, only 6% of mutual savings banks collapsed in this period.

***Figure 5:* Number of commercial and mutual savings banks 1929 - 1933**



Source: Author, All-Bank Statistics, p.37, p.49

Table 5 and *Table 6* list all the relevant ratios for both types of bank in the period 1929 and 1933. Firstly, the values for commercial banks are very similar to those of all U.S. banks, since almost all U.S. banks were commercial.

***Table 5*: Commercial banks** (1929 – 1933)

Ratio	1929	1930	1931	1932	1933
Loan-to-deposit ratio	73%	68%	62%	62%	51%
Total-debt-to-total-assets ratio	86%	85%	85%	84%	85%
Cash-deposit ratio	18%	21%	21%	20%	23%
Debt-equity ratio	611%	588%	575%	519%	554%

Source: Calculation based on data from All-Bank Statistics, for detail see Appendix, *Table A.6*

***Table 6*: Mutual savings banks** (1929 – 1933)

Ratio	1929	1930	1931	1932	1933
Loan-to-deposit ratio	66%	65%	62%	61%	59%
Total-debt-to-total-assets ratio	90%	90%	90%	91%	89%
Cash-deposit ratio	2%	3%	4%	4%	4%
Debt-equity ratio	917%	865%	882%	956%	806%

Source: Calculation based on data from All-Bank Statistics, for detail see Appendix, *Table A.7*

When the loan-to-deposit ratio is compared, is was lower in a case of mutual savings banks, except the year 1933, which is an evidence of conservatism among the mutual savings banks, they kept roughly 40% of their deposits in times of a financial crisis. The total debt-to-total assets ratio was even higher for mutual savings banks, but again almost stable in both types of banks. The crucial difference can be observed in the cash-deposit ratio, where commercial banks had 20% on average whereas mutual savings banks had only 2% of its deposits in cash in 1929 and 4% later in 1933. Concerning the liquidity issue, this ratio proves that mutual savings banks were completely unprepared for a possible bank run and despite this fact, 94% of them had survived the 5 years of financial distress. Looking at the debt-equity ratio, the turbulences in commercial banks are almost equivalent to those of all banks. But in the case of mutual savings banks, they

were financing their operations on their own, so the amount of debt is not so relevant here, the percentage is enormous, but the money is owned solely to the owners who are the only depositors. Also, the percentage of outside borrowings is negligible (see Appendix, *Table A.7*). These two last ratios help to explain why mutual savings bank persisted the Great Depression with almost no harm. The core is the essential structure of these banks, particularly the trust of depositors – owners. Clearly, since they donated their own money to the bank´s operations, they knew that during the financial crisis they could not withdraw it without harming the bank even more and they did the opposite instead. The amount of assets was growing in the period, so did the amount of cash available and even the deposits, which suggests that the trust into own business was the key decisive factor.

***Table 7*: National commercial banks** (1929 – 1933)

Ratio	**1929**	**1930**	**1931**	**1932**	**1933**
Loan-to-deposit ratio	69%	64%	59%	59%	48%
Total-debt-to-total-assets ratio	87%	86%	86%	85%	86%
Cash-deposit ratio	20%	23%	23%	20%	25%
Debt-equity ratio	642%	626%	632%	571%	630%

Source: Calculation based on data from All-Bank Statistics, for detail see Appendix, *Table A.10*

***Table 8*: State commercial banks** (1929 – 1933)

Ratio	**1929**	**1930**	**1931**	**1932**	**1933**
Loan-to-deposit ratio	77%	72%	64%	64%	54%
Total-debt-to-total-assets ratio	85%	85%	84%	82%	83%
Cash-deposit ratio	17%	20%	20%	19%	21%
Debt-equity ratio	589%	560%	532%	470%	490%

Source: Calculation based on data from All-Bank Statistics, for detail see Appendix, *Table A.11*

Supportive of this idea is also the comparison of national and state commercial banks in times of financial crisis. The calculation of the four relevant ratios for these two types of bank (*Table 7* and *Table 8*) showed that there were no significant differences, only that the state banks lend more money compared to deposits than national banks (10% difference on average) and that the national banks had even higher the debt-capital ratio. Nevertheless, the national banks were more successful in the period 1929 – 1933. *Table A.8* and *Table A.9* in Appendix describe the financial difficulties of national and state banks in the years 1929 - 1933. Having a closer look at the total numbers of both types of banks, the national banks survived the first five years of Great Depression at a higher rate (68%) than the state banks (54%). In terms of the terminal suspensions, it stems from the data that state banks were falling almost twice as much as the national banks in each year (in 1929 and 1930 the rate was even higher). We can also see that greater percentage of state banks run annually into financial troubles than the national banks. A possible explanation is the already mentioned trust in the national banks which were directly controlled and operated by the Federal Reserve System, which undoubtedly contribute to a higher overall confidence of depositors (when compared to small independent banks operating on a local level).[26]

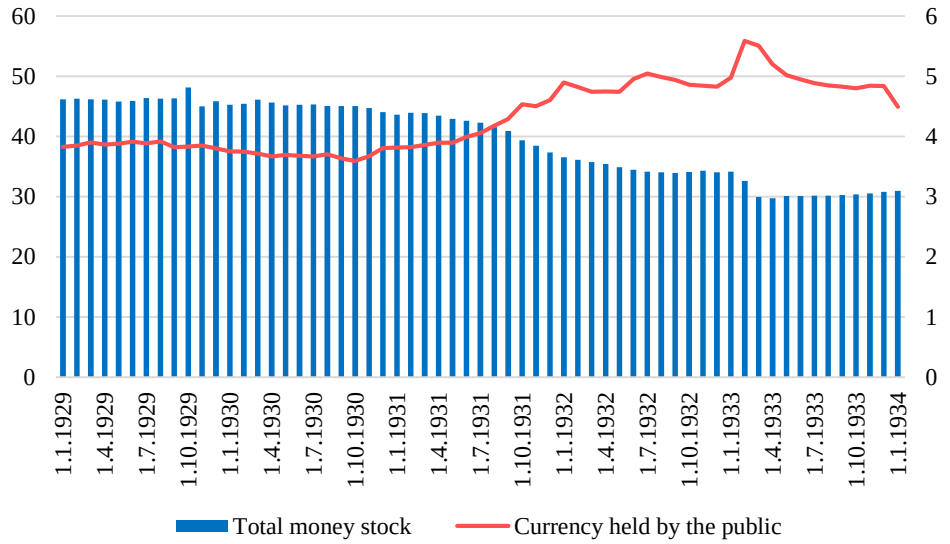
5.4 Role of the macroeconomic factors

The prevalent financial and economic conditions had undoubtedly a great impact on the financial health of many banks and vice versa – numerous bank failures are often blamed for turning the economic recession into a depression. Because if the trust of the public is lost and government measures turn out to be ineffective, restoring the confidence in the national economy and boosting investment is more than difficult. Several macroeconomic factors were chosen to be examined and compared with the situation in the bank market. The first one is the money stock (here concretely the amount in commercial banks and the currency held by public). *Figure 5* depicts a gradual decline in money stock between 1929 and the first half of 1931, then in autumn that year, the money stock started falling. Between 1.7. 1931 and 1.1. 1932 the money stock was cut by 4.7 billion dollars, and this is exactly the time when Great Britain abandoned the gold

[26]Note: State banks were either member or nonmembers banks.

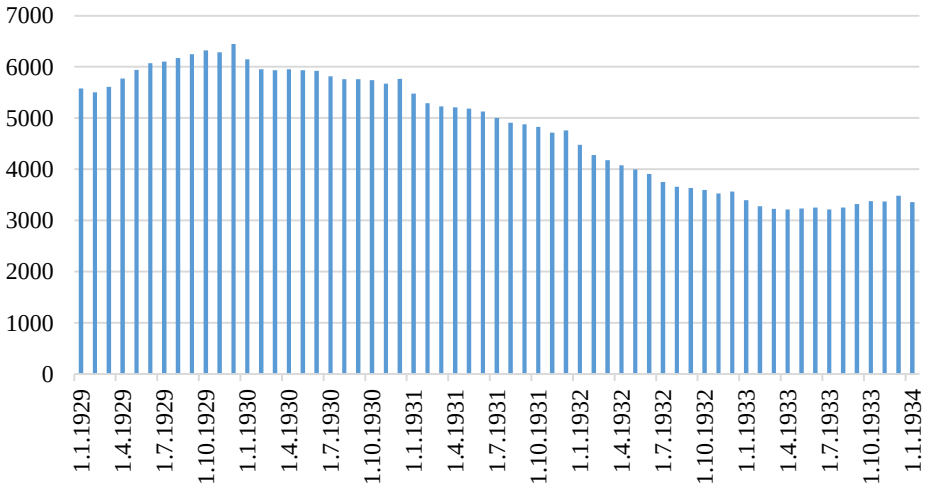
standard. The red line represents how much currency was held by the public and quite surprisingly, there were no significant fluctuations during 1929 and 1930. In 1931, the amount of currency held by public started growing slightly, up to the peak of 5.6 billions of dollars, which was reached on the 1st February 1933. By the end of 1933, it had dropped to 4.5 billion.

Figure 6: **Total money stock and currency held by the public**



Source: Author, Data from National Bureau of Economic Research
Note: Unit is USD billion

Figure 7: **Total consumer credit outstanding**

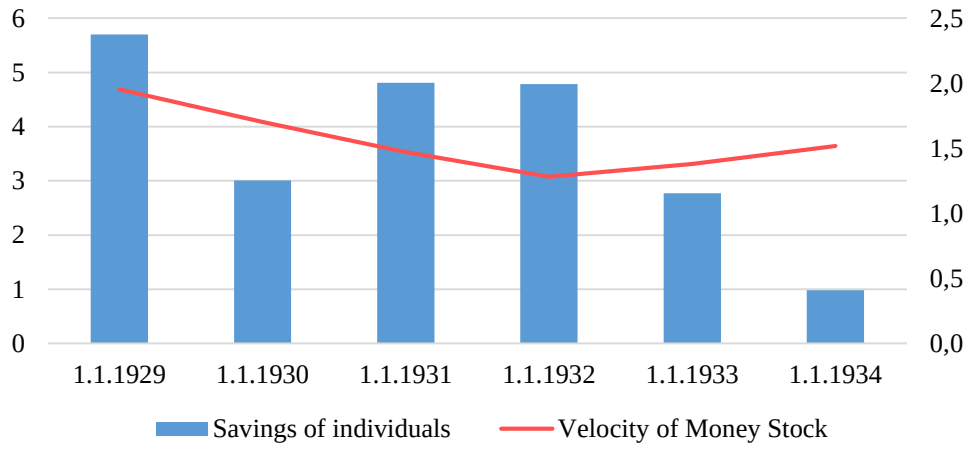


Source: Author, Data from National Bureau of Economic Research
Note: Unit is USD million

This figure together with *Figure 7* which shows the declining trend of consumer credit outstanding, supports the idea of excessive withdrawals (having shown that the money stock was declining and that the public held more and more currency it is only logical, that people were demanding their money). There was a peak in spring 1933 when it resulted in the National Bank Holiday as described earlier. The year 1933 appears to be the worst period when bank failures are concerned – 4000 of them collapsed (*Table 1*). From *Figure 6* we can see that in February/March that year there was a peak of currency held by the public as well as another further drop in the money stock. And this was exactly the time when National Bank Holiday was announced.

Figure 8 depicts changes in the savings of individuals which was equal to 5.7 billion of dollars at the beginning of 1929. It dropped by almost a half during 1929, probably as a result of the stock market crash. From *Figure 6* we know that there were no substantial deviations nor in the money stock overall neither in the currency held by the public and the velocity of money was on a decline. Thus, it is likely that this drop was caused by the significant downturn in the value of assets (deposits, respectively).

***Figure 8:* Savings of individuals and velocity of money stock**



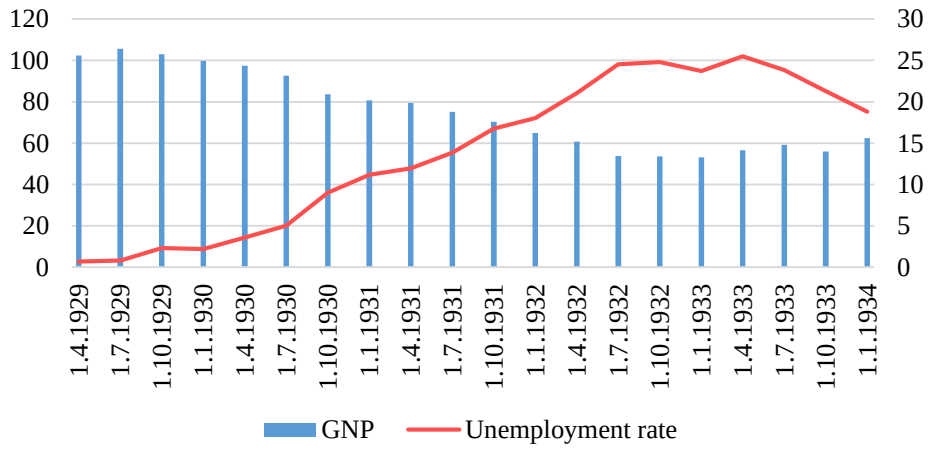
Source: Author, Data from National Bureau of Economic Research
Note: Savings of individuals in USD billion

During the year 1930, the savings increased from 3 billion USD to 4.8 billion USD, while the velocity of money stock was still declining and the currency held by public and level of money stock remained quite steady. This can be explained by restricted

consumption (spending) of households since the economy was depressed and the two big falls of Caldwell and Company and Bank of United States happened at the end of the year. In 1931, the saving of individuals remained almost unchanged, the money just transferred from banks to individuals as it can be seen from both *Figures 6* and *7*. Since 1932 the velocity of money is rising because excessive withdrawals continued (*Figure 6*), but the amount of savings decreased dramatically, this might have been partly caused by The Revenue Act (*Chapter 4.3*) and also by slightly increased spending, it was shown earlier in the thesis that this year of the Great Depression was not so deprived as the others. But the main inhibitor was most likely the asset devaluation again. The extreme decrease of individual savings in 1933 (less than 20% of its value in 1929) was undoubtedly a consequence of the National Bank Holiday, when unsecured depositors received probably less than half of their deposits if any and also the fall of 14 major U.S. banks that followed afterwards (see *Chapter 6.3* for more details).

Other macroeconomic factors with a potential impact are the unemployment rate and the gross national product (GNP), their development between 1929 and 1933 is described in *Figure 9*. With the unemployment being on the rise, people were rather saving their money, but in 1932 when the unemployment culminated, there occurred a slight improvement in terms of GNP and this might have contributed to the increased spending as well.

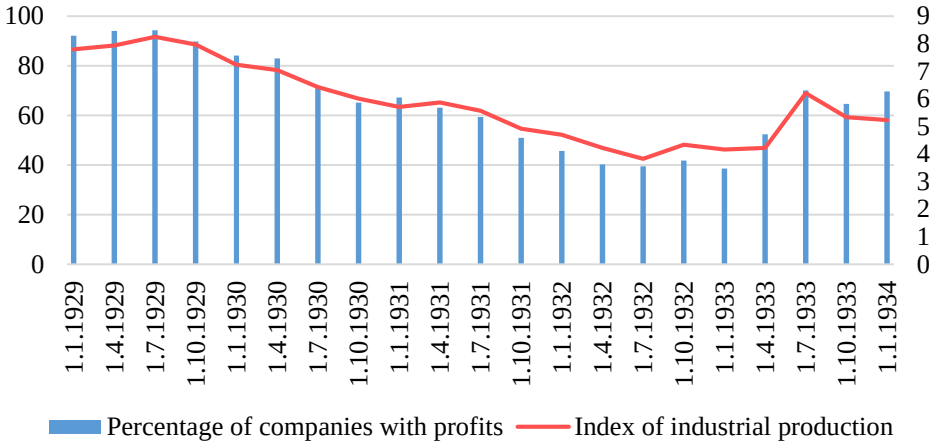
Figure 9: **Gross national product and unemployment rate**



Source: Author, Data from National Bureau of Economic Research
Note: Unit of GNP is USD billion

Figure 10 just completes the picture showing the percentage of companies with profits (almost 100% before the stock market crash!) and an index of industrial production. The development of these two variables between 1929 and 1932 goes along with the values of GNP and unemployment rate in *Figure 9*. What is interesting here is the change in April 1933, right after the National Bank Holiday, when the industrial production surged, more companies became profitable, the unemployment peaked (many bank employees were fired) but then begun to decrease steadily and the GNP also rose a little. Here is a further space for an econometric analysis to examine and test the respective impacts and outcomes of the National Bank Holiday, but the economic relief is unquestionable.

***Figure 10:* Percentage of companies with profits and index of industrial production**



Source: Author, Data from National Bureau of Economic Research

Figure 10 shows a strong correlation between industrial production and the percentage of companies with profits. After the stock market crash both variables started declining (companies assets were losing their value), they stabilised after The Revenue Act and surged after the National Bank Holiday. This again supports the statement that National Bank Holiday contributed to a healthier banking sector and therefore also to the slow recovery of the economy overall.

6. Would different policy have helped?

A crucial question is – what could have been done in order to mitigate the process of Great Depression and to cure the financial sector? The excessive withdrawals and devaluated assets resulted from *Chapter 5.2.1* and *Chapter 5.3* as the main factors causing the banks to fail. Their cash reserves, for instance, appear to fulfil the usual reserve requirements but they are insufficient when people withdraw money in huge amounts. As far as the excessive withdrawals are concerned, the most important factor is to calm down the public. Because as the all negative economic and financial news were published in the national newspaper, the contagion of fear spread across the whole country very easily. One possible way to decrease overall withdrawals would have been the deposit insurance, mandatory for all banks by law. *Table 9* includes data for estimated losses to unsecured depositors between years 1865 -1934. It is quite shocking to see, that the losses in three years (1931 – 1934) overcame the losses from the past 65 years more than twice. This only proves the enormous damage of the banking crisis during the Great Depression.

***Table 9*: Estimated losses to unsecured depositors in suspended banks 1865 – 1934**

Period	All banks	National banks	State and Private banks
1865 – 1920	263 million USD	54 million USD	209 million USD
1921 – 1930	815 million USD	196 million USD	619 million USD
1931 – 1934	2 333 million USD	880 million USD	1 453 million USD

Source: Federal Reserve Archive – Bank Suspensions 1892-1935, p.72

Federal Reserve Archive database provides a statistics regarding the percentage paid out to unsecured depositors in years 1921 and 1930, data for 1931 – 1933 are unfortunately not available but we can assume even more alarming figures in times of a crisis. As far as the national banks are concerned, they depositors received about 50 cents per dollar deposited and 62 cents per dollar on average were paid out to depositors of state banks.[27] Here comes a paradox since state banks were falling with a higher probability

[27] Federal Reserve Archive – Bank Suspensions 1892-1935, p.5

but on average the depositors received more in case of a bank liquidation when compared to national banks. Another policy implication could have been a nationalisation of the most distressed banks – there is no doubt that depositor would have been less panic if the government had guaranteed for their banks.

As far as devaluated assets are concerned, it was up to the government to compensate these losses to suffering banks, since the interbank cooperation on the national level was prohibited (*see Chapter 3.3*). Not only through buying the banks securities that were difficult to be sold in the market but also through financial help in terms of temporary loans or one-off donations. The financial injection donated by the Reconstruction Finance Corporation (*see Chapter 5.2.2*) in 1932 definitely brought a huge relief to the U.S. banks but had it been done earlier, depositors losses and bank damages could have probably been partially avoided. The same holds for the act of National Bank Holiday, if all banks were closed at the national level already in 1931, some might have realised their illiquidity or insolvency earlier than it was in reality and at least the damages to depositors could have been softened. Questionable though remains the hypothetical development of the economy afterwards, whether it would have brought a healthier financial sector and consequently an improved economic situation. Because of a big impact were also the political decisions made (discussed in *Chapter 4.3*). And finally, the economic policies implemented during the Great Depression (1929-1933 particularly) and described earlier in this thesis (changes in tax rates, restricting the money stock, kerbing the investment, inconsistent policies following the British suspension of the gold standard) were rather unfavourable to quick economic and financial recovery. In addition, Eichengreen and Temin (1997) suggest that the worldwide abandonment of gold standard in time could have mitigated the worldwide depression.

Minsky (1986) pointed out at the difference between the Great Depression and recession in 1975 – 1982, when the government improved the national income, stabilised employment and supported business profits (therefore the assets value increased). Moreover, the Federal Reserve acted as a lender of last resort and pumped financial injections to troubled institutions (mostly banks). On the other hand, the appropriateness of financial aid provided by the central bank or a government should be considered very carefully to avoid the phenomenon of "too-big-to-fail" institutions.

6.1 Comparison with the recent financial crisis in 2008

The recent financial crisis burst with the fall of Lehman Brothers (one of the largest investment banks in the United States) in September 2008. Three macroeconomic variables are compared here to briefly show the macroeconomic difference. There again followed a fall in GDP - between years 1929 and 1933, it dropped by 28%, whereas in years 2008 and 2009 id declined only by 2.3% and started rising afterwards[28]. This was similar to the industry production index - the drop between 1929 and 1933 was by 50% of its value, between 2008 and 2009 only 20% of its value and then it started increasing.[29] The unemployment rate surged as a result of these downturns, it peaked at 10% in 2010 and since the U.S. started to adding jobs, the unemployment began declining and since 2011 slightly improving economy could have been observed.[30] Bank failures were less common, in the period 2008 – 2012 only 17% failed.[31] Obviously, the statistics from Great Depression is much more dramatic when compared to the financial crisis of 2008.

William A. Strauss, an economic advisor from the Federal Reserve Bank of Chicago asserts that the recent crisis was milder because some mistakes made during the Great Depression were avoided, such as restricting federal spending during the economic downturn, increasing tax revenues and imposing large tariffs on imported goods.[32] Krugman (2012) suggests that one of the reasons that the crisis did not turn into a depression was that the U.S. avoided a fiscal contraction because their single currency was backed by the government. Nevertheless, impacts of this financial crisis were worldwide and severe and there were undoubtedly some shortcomings. Krugman (2012) agrees with Minsky (1986) that increasing leverage in the time of stability can be actually dangerous if the debt grows too much. This was similar to the banking crisis during the Great Depression when the debt-to-total-assets ratio fluctuated around 85% (*Chapter 5.3, Table 4*) explaining the huge vulnerability of all banks. The main issue in 2008 was again a bubble, but this time in the housing market, particularly the subprime mortgages business. There definitely is a parallel between these two crises in terms of problematic assets that were easy (cheap) to obtain but difficult to sell when the crisis came. Since

[28] U.S. Bureau of Economic Analysis: GDP and Other Major NIPA Series, 1929–2012:II
[29] Board of Governors of the Federal Reserve System (U.S.), *Industrial Production Index*
[30] U.S. Bureau of Labor Statistics, *Civilian Unemployment Rate*
[31] Federal Financial Institutions Examination Council
[32] "Economist discusses 2009 vs. the 1930s." (2009, January 27). *Augustana College*.

2008, many people tried to diminish their debt (selling houses etc.) but it became a vicious circle only worsening the situation – the same as selling securities after the ctock market crash in 1929. Decreased consumer spending with the goal to repay their debts only slow the economy and with increasing unemployment the debt spiral seemed inevitable.

Krugman (2012) also stresses out the importance of banks capital ratio (i.e., what percentage of assets was represented by deposits) – back in the 1930s it was around 80% (*Table A.5* in Appendix), which means that if the bank had lost 20% of its assets (due to their devaluation) it should still have been able to pay out all its depositors. On the contrary, the capital of U.S. banks in 2008 covered only a few percent of their assets.[33] Weiss (2008) points out that back in the 1930s bank failures were typically viewed as natural consequences of the economic downturn, personal mismanagement and speculative turmoil instead of being a possible cause of the economic depression. With this lesson being learned, the support of banking institutions to prevent them from falling appears to be logical when the goal is to restrict bank runs, but it was also shown that the National Bank Holiday in 1933 helped to clear the banking system of poor performing banks and brought a further relief to the economy. The effort to save as many banks as possible, even at the cost of financing unprofitable and financially unhealthy institutions is, therefore, questionable. The costs of these policies and decisions are to be seen and evaluated in the coming years.

Regarding the recent crisis in 2008, Weiss (2008) considers the government intervention greater than back in the 1930s, but since there were present larger speculative bubbles, including the whole housing market and the U.S. position shifted from a creditor to a debtor nation, there were certain limitations to the state aid. What he adds as new drawbacks (not present during the Great Depression) is the forced liquidation of many derivatives (almost unknown in the early 1930s) and high dependency on international capital, the excessive amount of bad debt was present in both crises. Nevertheless, all these obstacles were exceeded mainly because of the U.S. Safety net which was created to prevent enormous depression to happen (again). The safety net consists of discount window (lender of last resort), open market operations performed by Federal Reserve, the existence of Federal Deposit Insurance Corporation and finality on interbank clearing settlements on Fedwire by the Federal Reserve (Kaufmann, 1996). All these tools

[33] Krugman (2012), p.59

undisputedly help the U.S. economy during a financial distress and as it was suggested earlier, they are very likely to fulfil the most important role in such a time: to calm down the society, especially depositors (to avoid excessive withdrawals) and also the consumers (to keep a sufficient level of consumption and investment). This was probably the most important difference between the two crises, that in 2008 the United States were better (not perfectly though) prepared for an economic crisis with these measures, which resulted in a less serious downturn than in the period of 1929 -1933.

Despite this conclusion, there still remains a controversy regarding the number of collapsed banks. The issue of "too-big-to-fail" institutions was already mentioned in Chapter 6.3 and there is definitely space for further investigation, of whether the U.S. banks and the U.S. banking sector, in general, are in a better shape now, operating in an effectively regulated environment or if the support of Federal Reserve and government is excessive because it is too costly to let some banks fail.

7. Conclusion

The banking panic that occurred during the Great Depression was undoubtedly influenced by the external factors such as the ongoing economic downturn and the respective policies that were implemented but there were also found several important causes inside the banking sector. What is remarkable is the fact that the banking panic lagged the stock exchange crash in 1929 by more than a year, which was supported not only by the absolute number of bank failures in each years but also the assets and even the deposits in all types of observed banks increased from 1929 to 1930, which suggests that people trusted the banking system even after 1929 until the first large institution fell down. The fall of Caldwell and Company (a large investment house) in November 1930 was revealed as a crucial catalyst that induced the first huge wave of bank failures and can be compared to the "Lehman Brothers moment" in 2008. The situation only worsens with the collapse of Bank of United States in December 1930, which was the second largest institution that failed in the period 1929 -1933.

The main weakness of the banking sector appeared to be the insufficient deposit insurance system and this thesis described in detail that huge damages could have been avoided. The banking panic started not only because people simply trusted banks less, but mainly because their deposits were mostly uninsured and they knew they if they had wanted to receive the whole amount of deposits that they would have had to withdraw their money in time. Consequently, this work showed that national banks performed better during the crisis that state banks, which again implies that the trust of the public is the core factor. Moreover, the balance sheet examination brought interesting results for the comparison of commercial and mutual savings banks, where the second type survived the banking crisis at much higher rate than the first one, even though their aggregate balance sheets did not differ significantly. The trust of depositors is again considered to be the decisive factor here. In addition, the balance sheet analysis indicated that many banks faced high financial risk already before the year 1929 due to a huge banks' leverage when they were operating with multiples of their equity without sufficient reserves. Here was found the crucial drawback, because banks were falling even before the year 1929 but just rarely and these risks were rather disregarded because there functioned enormous public trust and troubled banks rather merged instead of admitting a bankruptcy. But during the economic and financial instability, the vulnerability of banks only multiplied and brought severe consequences.

Among the biggest policy mistakes that contributed to the economic downturn and continuing bank distress, there were identified especially the increases in tax rates, restrictions of the money stock, kerbing the investment, and unsystematic and rare financial injections provided to the troubled institutions. Accordingly, the implementation of open market operations represented a huge relief to the economy but was probably implemented too late.

The final comparison with the recent worldwide financial crisis from 2008 showed that the recent crisis in the United States was less severe and the contributing factors included avoiding financial contraction, improving federal spending, not increasing the tax level, not restricting imports and creating new jobs to fight with unemployment. All these policy decisions together with the proper functioning of the Safety net helped the USA to recover faster and to mitigate the consequences more than during the Great Depression. This experience supports the following policy implications connected to the banking crises: First of all, it is important to keep the public trust, through the insured deposits and also decreasing the interest rate to boost investment (of both individuals and companies). Not only should the state announce a planned financial aid to banks and increase the money stock in the economy, but it should also allow interbank cooperation at all levels and possibly should also buy some banks' assets with decreased value to provide liquidity to them. Regarding the economic decisions, in times of an economic downturn is it natural to decrease wages in order to hire more people and therefore to prevent the unemployment from growing and also to improve the production and therefore companies' profits and value of their assets What should also be considered is the re-introduction of mutual savings banks which proved themselves to withstand even the Great Depression with minimum losses.

Despite this conclusion, there still remains a space for further investigation related to the issue of "too-big-to-fail" institutions. We can ask whether the U.S. banks and the U.S. banking sector, in general, are in a better shape now, operating in an effectively regulated environment or if the support of Federal Reserve and government is excessive because it is too costly to let some banks fail. Already back in the 1930s, many banks were operating at high financial risk and the defalcation and mismanagement occurred among the top causes of their failures. Since the banking structure has become more complicated, this challenging topic of a sufficient bank control gained a worldwide importance and many experts are calling for stricter bank controls, properly evaluated balance sheets and more transparent operations. The following research should definitely include the balance sheet analysis of the biggest U.S. banks, description of their recent performance and a comparison with the amount of state aid provided to these particular banks.

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Appendix

***Table A.1*: National and state banks in financial difficulties (1921 –1933)**

Categories	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Terminal suspensions	368	225	555	630	498	764	509	426	559	1137	1938	1137	3741
Temporary suspensions	93	118	68	108	81	160	127	53	69	155	275	279	150
Consolidations (mergers and absorptions)	305	394	329	373	363	462	567	534	636	769	798	433	322
Voluntary liquidations	48	35	51	80	59	75	57	71	57	68	99	101	89
Conversions to private banks	-	1	1	2	2	4	2	2	1	1	-	4	-
Unclassified	3	5	-	2	5	2	3	1	2	4	-	9	52
Total	**817**	**778**	**1004**	**1135**	**1008**	**1467**	**1265**	**1087**	**1324**	**2134**	**3310**	**1963**	**4354**

Source: Federal Reserve Bulletin (November 1937), p. 1087

Table A.2: **Bank suspensions according to the size of the town**

Population	1929	1930	1931	1932	1933
500 and less	235	431	665	444	1098
500-999	139	272	401	255	816
1000-2499	137	273	426	281	787
2500-4999	49	124	213	149	380
5000-9999	35	65	140	92	276
10000-24999	24	55	134	83	232
25000-49999	8	25	67	28	106
50000-99999	8	37	54	24	88
100000 and over	24	68	193	97	217
Total	**659**	**1350**	**2293**	**1453**	**4000**

Source: Author, Data from Federal Reserve Bulletin (September 1937), p.907

Table A.3: **Bank suspensions according to the volume of loans and investments**

Size group	1929	1930	1931	1932	1933
150 and less	304	544	699	543	1262
150-249	108	250	402	251	667
250-499	123	288	474	292	781
500-999	69	140	327	180	613
1000-1999	24	61	183	102	322
2000-4999	12	38	123	55	214
5000-9999	3	10	44	17	65
10000-49999	1	9	23	10	46
50000 and over		1	1		7
N/A	15	9	17	3	23
Total	**659**	**1350**	**2293**	**1453**	**4000**

Source: Author, Data from Federal Reserve Bulletin (September 1937), p. 891

Table A.4: Thirty largest banks suspended during 1929 - 1935

Table 18 -- THIRTY LARGEST BANKS WHICH SUSPENDED DURING 1921-1935

(Arranged according to amount of loans and investments)

Name and location of bank		Date of suspension	Class of bank 1/	Loans and investments	Deposits
				(thousands of dollars)	
First National Bank of Detroit	Detroit, Mich.	5-12-33	Nat.	379,788	373,360
Bank of United States	New York, N.Y.	12-11-30	S.M.	213,403	161,000
Union Trust Company	Cleveland, Ohio	6-16-33	S.M.	189,563	194,906
Guardian Trust Company	Cleveland, Ohio	6-16-33	S.M.	122,038	109,752
Guardian National Bank of Commerce	Detroit, Mich.	5-12-33	Nat.	109,856	108,103
Canal Bank & Trust Company	New Orleans, La.	5-22-33	S.M.	60,720	58,012
First Central Trust Company	Akron, Ohio	6-21-33	S.M.	59,795	41,845
Bank of Pittsburgh, N.A.	Pittsburgh, Pa.	9-19-31	Nat.	58,426	43,759
Baltimore Trust Company	Baltimore, Md.	8- 7-33	S.M.	57,832	30,642
Bankers Trust Company	Philadelphia, Pa.	12-22-30	Non.	47,932	44,497
Hibernia Bank & Trust Co.	New Orleans, La.	5-22-33	S.M.	47,535	52,860
Ohio Savings Bank & Trust Co.	Toledo, Ohio	8-17-31	Non.	44,261	38,692
National Bank of Kentucky	Louisville, Ky.	11-15-30	Nat.	37,721	37,830
Franklin Trust Company	Philadelphia, Pa.	10- 6-31	Non.	35,763	21,777
American Savings Bk. & Tr.Co.	Davenport, Ia.	10- 1-31	S.M.	31,357	26,858
Fidelity National Bk. & Tr.Co.	Kansas City, Mo.	7-24-33	Nat.	29,749	18,407
Federal National Bank	Boston, Mass.	12-15-31	Nat.	28,484	24,000
Harriman National Bk. & Tr.Co.	New York, N. Y.	10-16-33	Nat.	25,944	22,630
City Bank & Trust Company	Hartford, Conn	1- 2-32	Non.	25,755	23,512
Security Home Trust Company	Toledo, Ohio	6-16-31	Non.	25,148	25,192
Fletcher American National Bk.	Indianapolis, Ind.	8-24-33	Nat.	24,235	15,269
Worcester Bank & Trust Co.	Worcester, Mass.	6-12-33	S.M.	24,045	23,453
Union Trust Company	Dayton, Ohio	10-30-31	S.M.	23,553	20,156
Union Savings Bk. & Trust Co.	Davenport, Iowa	12-28-32	Non.	22,315	12,525
Central National Bank	Oakland, Calif.	4-24-33	Nat.	22,096	18,651
Commerce Guardian Trust & Savings Bank	Toledo, Ohio	8-17-31	S.M.	20,756	15,458
The George D. Harter Bank	Canton, Ohio	10-22-31	Non.	20,591	17,982
Old First National Bank & Trust Company	Fort Wayne, Ind.	10-30-33	Nat.	20,175	12,464
Central Bank & Trust Company	Asheville, N.C.	11-20-30	Non.	20,124	17,563
East Tennessee National Bank	Knoxville, Tenn.	1-20-33	Nat.	19,952	9,000
Total				1,848,912	1,620,155

1/ Nat. - National bank; S.M. - State member bank; Non. - Nonmember bank.

Source: Federal Reserve Archive – Bank Suspensions 1892-1935, p.36

Table A.5: **Aggregate balance sheets items for all U.S. banks**

Balance sheet items	**1929**	**1930**	**1931**	**1932**	**1933**
Total assets	72 315	74 290	70 070	57 295	51 359
Loans	41 944	40 990	35 416	28 071	22 337
Cash assets	9222	11201	10405	7407	7793
Currency and coins	770	831	851	767	641
Cash items in process of collection	2397	3663	2531	1376	1510
Banker´s balances (including reserves)	6055	6707	7023	5264	5642
Total debts (Deposits + Borrowings + National bank notes + Other liabilities)	62 565	63 918	60 198	48 770	43 971
Deposits	58 269	60 365	57 187	45 569	41 684
Borrowings	1 710	762	485	1 282	539
National bank notes	649	649	636	649	727
Other liabilities	1 937	2 142	1 890	1 270	1 021
Equity	9 750	10 372	9 872	8 525	7 388
Capital	3 883	3 997	3 749	3 358	2 943
Surplus and other capital accounts	5 867	6 375	6 123	5 167	4 445

Source: Author, Data from All-Bank Statistic
Note: Units is USD million

Table A.6: **Aggregate balance sheets items for U.S. commercial banks**

Balance sheet items	**1929**	**1930**	**1931**	**1932**	**1933**
Total assets	62 442	64 125	59 017	46 304	40 511
Loans	36 114	35 043	29 307	22 001	16 457
Cash assets	9004	10910	10017	6970	7368
Currency and coins	740	799	816	715	582
Cash items in process of collection	2394	3659	2526	1372	1506
Banker´s balances (including reserves)	5870	6452	6675	4883	5280
Total debts (Deposits + Borrowings + National bank notes + Other liabilities)	53 662	54 807	50 271	38 820	34 321
Deposits	49 385	51 267	47 277	35 658	32 078
Borrowings	1 708	761	481	1 266	523
National bank notes	649	649	636	649	727
Other liabilities	1 920	2 130	1 877	1 247	993
Equity	8 780	9 318	8 746	7 484	6 190
Capital	3 884	3 997	3 748	3 358	2 943
Surplus and other capital accounts	4 896	5 321	4 998	4 126	3 247

Source: Author, Data from All-Bank Statistic
Note: Units is USD million

Table A.7: **Aggregate balance sheets items for U.S. mutual savings banks**

Balance sheet items	**1929**	**1930**	**1931**	**1932**	**1933**
Total assets	9 873	10 164	11 052	10 991	10 846
Loans	5 830	5 947	6 108	6 071	5 680
Cash assets	219	291	388	437	425
Currency and coins	30	32	35	51	59
Cash items in process of collection	3	4	5	5	5
Banker´s balances (including reserves)	186	255	348	381	361
Total debts (Deposits + Borrowings + National bank notes + Other liabilities)	8 902	9 111	9 927	9 950	9 650
Deposits	8 884	9 099	9 910	9 911	9 606
Borrowings	2	1	4	16	16
National bank notes	0	0	0	0	0
Other liabilities	16	11	13	23	28
Equity	971	1 053	1 125	1 041	1 198
Capital	0	0	0	0	0
Surplus and other capital accounts	971	1 053	1 125	1 041	1 198

Source: Author, Data from All-Bank Statistic
Note: Units is USD million

Table A.8: National banks in financial difficulties (1929 –1933)

Categories	1929	1930	1931	1932	1933	Total
Terminal suspensions	61	157	384	232	1097	**1931**
Temporary suspensions	3	4	25	44	4	**80**
Consolidations (mergers and absorptions)	225	259	275	123	84	**966**
Voluntary liquidations	3	7	8	10	5	**33**
Conversions to state banks	36	18	19	8	18	**99**
Conversions to private banks	-	-	-	1	-	**1**
Total number of banks in difficulties	**328**	**445**	**711**	**418**	**1208**	**3110**
Total number of active banks	**7403**	**7031**	**6368**	**6011**	**5154**	

Source: Author, Data from Federal Reserve Bulletin (November 1937), p. 1087

Table A.9: State banks in financial difficulties (1929 –1933)

Categories	1929	1930	1931	1932	1933	Total
Terminal suspensions	498	980	1554	905	2644	**6581**
Temporary suspensions	66	151	250	235	146	**848**
Consolidations (mergers and absorptions)	411	510	523	310	238	**1992**
Voluntary liquidations	54	61	91	91	84	**381**
Conversions to national banks	27	36	8	7	23	**101**
Conversions to private banks	1	1	-	3	-	**5**
Unclassified	2	4	-	9	52	**67**
Total number of banks in difficulties	**1059**	**1743**	**2426**	**1560**	**3187**	**9975**
Total number of active banks	**16292**	**14846**	**12781**	**11567**	**9198**	

Source: Author, Data from Federal Reserve Bulletin (November 1937), p. 1088

Table A.10: **Aggregate balance sheets items for U.S. national commercial banks**

Balance sheet items	**1929**	**1930**	**1931**	**1932**	**1933**
Total assets	27 260	28 828	27 430	22 318	20 813
Loans	14 805	14 874	13 162	10 265	8 102
Cash assets	4279	5408	4988	3480	4110
Currency and coins	297	340	367	336	286
Cash items in process of collection	1228	1808	1262	692	764
Banker´s balances (including reserves)	2754	3260	3359	2452	3060
Total debts (Deposits + Borrowings + National bank notes + Other liabilities)	23 588	24 859	23 681	19 044	17 963
Deposits	21 586	23 235	22 164	17 428	16 742
Borrowings	764	237	164	546	127
National bank notes	649	649	636	649	727
Other liabilities	589	738	717	421	367
Equity	3 672	3 969	3 749	3 334	2 850
Capital	1 626	1 740	1 684	1 566	1 512
Surplus and other capital accounts	2 046	2 229	2 065	1 768	1 338

Source: Author, Data from All-Bank Statistic
Note: Units is USD million

Table A.11: **Aggregate balance sheets items for U.S. state commercial banks**

Balance sheet items	**1929**	**1930**	**1931**	**1932**	**1933**
Total assets	35 181	35 297	31 587	23 985	19 698
Loans	21 308	20 169	16 145	11 735	8 355
Cash assets	4725	5502	5029	3490	3259
Currency and coins	444	459	449	379	296
Cash items in process of collection	1165	1851	1264	680	742
Banker´s balances (including reserves)	3116	3192	3316	2431	2221
Total debts (Deposits + Borrowings + National bank notes + Other liabilities)	30 075	29 949	26 590	19 774	16 358
Deposits	27 799	28 032	25 113	18 229	15 337
Borrowings	944	524	317	720	395
National bank notes	0	0	0	0	0
Other liabilities	1 332	1 393	1 160	825	626
Equity	5 106	5 348	4 997	4 211	3 340
Capital	2 257	2 256	2 064	1 793	1 431
Surplus and other capital accounts	2 849	3 092	2 933	2 418	1 909

Source: Author, Data from All-Bank Statistic
Note: Units is USD million